

I CLAIM:

1 1. A surface effects skimmer comprising:
2 a main hull suitable for carrying at least one human occupant and having:
3 a bow of the main hull;
4 a stern of the main hull;
5 a port side of the main hull;
6 a starboard side of the main hull;
7 a centerline running between the bow and the stern; and
8 a hull bottom defining a tunnel open to the stern;
9 at least one rearward thrust, and
10 a downward air flow;
11 wherein the downward air flow is directed into the tunnel to reduce drag
12 between the hull bottom and an adjacent surface.

1 2. The surface effects skimmer of Claim 1, wherein the tunnel includes a
2 bow end, and wherein a Deflector Air Gate (DAG) is pivotally attached to the hull
3 bottom near the bow end of said tunnel, wherein the DAG pivots about a DAG
4 axis orthogonal to the hull centerline and substantially on the hull bottom, and
5 wherein the DAG axis is proximal to a bow most portion of the DAG.

3. The surface effects skimmer of Claim 2, wherein the DAG is pivotable between approximately zero degrees relative to the hull bottom to approximately twenty degrees relative to the hull bottom.

4. The surface effects skimmer of Claim 2, wherein the DAG regulates the downward air flow into the tunnel.

5. The surface effects skimmer of Claim 4, wherein the DAG is approximately the same width as the tunnel and the DAG is approximately square.

6. The surface effects skimmer of Claim 1, wherein the at least one rearward thrust comprises a port rearward thrust and a starboard rearward thrust.

7. The surface effects skimmer of Claim 1, further including at least one ducted fan creating an air flow, and wherein the at least one rearward thrust is derived from the air flow.

1 8. The surface effects skimmer of Claim 7, wherein the at least one ducted
2 fan comprises at least one port ducted fan creating a port air flow and at least
3 one starboard ducted fan creating a starboard air flow and wherein the at least

4 one rearward thrust comprises a port rearward thrust derived from the port air
5 flow and a starboard rearward thrust derived from the starboard air flow.

9. The surface effects skimmer of Claim 8, wherein the at least one port
ducted fan comprises a port forward fan and a port rearward fan and the at least
one starboard ducted fan comprises a starboard forward fan and a starboard
rearward fan.

10. The surface effects skimmer of Claim 8, wherein:

2 the port ducted fan resides in a port ducted fan box and the starboard
3 ducted fan resides in a starboard ducted fan box; and

4 the port thrust emanates from a rear portion of the port ducted fan box
5 and the starboard thrust emanates from a rear portion of the starboard ducted
6 fan box, and

7 further including:

8 a port thrust gate residing proximal to the rear portion of the port ducted
9 fan box and adapted to regulate the port thrust; and

10 a starboard thrust gate residing proximal to the rear portion of the
11 starboard ducted fan box and adapted to regulate the starboard thrust.

11. The surface effects skimmer of Claim 7, wherein the at least one ducted fan is powered by an automotive engine.

12. The surface effects skimmer of Claim 1, further including an air scoop creating a scoop air flow, and wherein the downward air flow is derived from the scoop air flow.

13. The surface effects skimmer of Claim 1, further including a port horizontal stabilizer residing proximal to the stern of the main hull and a starboard horizontal stabilizer residing proximal to the stern of the main hull.

14. The surface effects skimmer of Claim 1, further including port and starboard trolling motors for maneuvering at low speed.

15. The surface effects skimmer of Claim 1, further including a port outrigger extending outwardly to the port side of the main hull and a starboard outrigger extending outwardly to the starboard side of the main hull, wherein the outriggers are adapted to increase stability.

1 16. The surface effects skimmer of Claim 15, further including a port outrigger
2 tip extending downwardly from the port most edge of the port outrigger and a

3 starboard outrigger tip extending downwardly from the starboard most edge of
4 the starboard outrigger, wherein the outrigger tips are adapted to limit roll when
5 the outrigger tips contact the surface.

17. The surface effects skimmer of Claim 1, further including a port outrigger
extending outwardly on the port side of the main hull and a starboard outrigger
extending outwardly on the starboard side of the main hull, wherein the
outriggers are adapted to provide lift.

18. The surface effects skimmer of Claim 1, wherein the hull bottom includes
a stern projecting portion defining a tunnel stern portion of said tunnel, and
wherein the stern projecting portion defines a sharp stern pointing horizontal
edge.

1 19. A surface effects skimmer comprising:
2 a main hull suitable for carrying at least one human occupant and having:
3 a bow of the main hull;
4 a stern of the main hull;
5 a port side of the main hull;
6 a starboard side of the main hull;
7 a hull centerline running from the bow to the stern; and

8 a hull bottom defining a tunnel open to the stern;
9 at least one port ducted fan for creating a port air flow;
10 at least one starboard ducted fan for creating a starboard air flow;
11 a downward air flow derived from the port air flow and the starboard air
12 flow;
13 a port rearward thrust derived from the port air flow;
14 a starboard rearward thrust derived from the starboard air flow; and
15 a Deflector Air Gate (DAG) pivotably attached to the hull bottom near the
16 bow end of said tunnel, wherein the DAG rotates about an axis perpendicular to
17 the hull centerline,
18 wherein the downward air flow is regulated and directed into the tunnel by
19 said DAG to reduce drag between the hull bottom and an adjacent surface.

1 20. A method for transporting humans over a surface in a vehicle, utilizing
2 surface effects, comprising:

3 creating a port air flow using a port ducted fan;
4 creating a starboard air flow using a starboard ducted fan;
5 generating a port thrust from the port air flow;
6 generating a starboard thrust from the starboard air flow;
7 controlling a Deflector Air Gate (DAG) to regulate a downward air flow
8 derived from the port air flow and the starboard air flow; and

9 containing the downward air flow in a tunnel defined by a bottom surface
10 of said vehicle, wherein the downward air flow is controlled by the DAG, a port
11 tunnel edge and a starboard tunnel edge.